CLAIMS

[Claim 1]

A device for removing dissolved oxygen in alcohol, comprising a hydrogen-occluding metal catalyst in which hydrogen is occluded, the catalyst being charged in the device,

wherein dissolved oxygen is removed from alcohol that contains the dissolved oxygen by bringing the alcohol into contact with the hydrogen-occluding metal catalyst.

[Claim 2]

The device for removing dissolved oxygen in alcohol according to Claim 1, further comprising a hydrogen adding device for allowing the hydrogen-occluding metal catalyst to occlude hydrogen.

[Claim 3]

An alcohol supply apparatus for supplying alcohol, the alcohol being used to rinse or dry an object, or to rinse and to dry an object, and the alcohol supply apparatus comprising:

the device for removing dissolved oxygen according to Claim 1 or 2, and

a water removing device positioned downstream of the device for removing dissolved oxygen, wherein the water removing device removes water generated in the device for removing dissolved oxygen when the dissolved oxygen is removed.

[Claim 4]

The alcohol supply apparatus according to Claim 3, further comprising:

an alcohol concentration measuring device for measuring alcohol concentration in a liquid, the liquid being obtained by the device for removing dissolved oxygen,

a bypass line that bypasses the water removing device,

control means for controlling the bypass line such that the liquid obtained by the device for removing dissolved oxygen flows through the bypass line when the alcohol concentration, measured by the alcohol concentration measuring device, is equal to or more than a predetermined value and such that the liquid obtained by the device for removing dissolved oxygen flows through the water removing device when the alcohol concentration, measured by the alcohol concentration measuring device, is less than the predetermined value.

[Claim 5]

A rinsing liquid supply apparatus, the rinsing liquid being used to rinse an object, and the rinsing liquid supply apparatus comprising:

the device for removing dissolved oxygen according to Claim 1 or 2,

pure water supply means, and

a mixed water storage tank positioned downstream of the device for removing dissolved oxygen and the pure water supply means, the mixed water storage tank storing a mixture of the alcohol obtained by the device for removing dissolved oxygen and pure water supplied from the pure water supply means.

[Claim 6]

A rinsing liquid supply apparatus, the rinsing liquid being used to rinse an object, and the rinsing liquid supply apparatus comprising:

alcohol supply means,

pure water supply means,

a mixed water storage tank positioned downstream of the alcohol supply means and the pure water supply means, the mixed water storage tank storing a mixture of alcohol supplied from the alcohol supply means and pure water supplied from the pure water supply means, and

the device for removing dissolved oxygen according to Claim 1 or 2, the device being positioned downstream of the mixed water storage tank.

[Claim 7]

A method of removing dissolved oxygen in alcohol, comprising removing dissolved oxygen from alcohol that contains the dissolved oxygen by bringing the alcohol into contact with a hydrogen-occluding metal catalyst which occludes hydrogen.

[Claim 8]

The method of removing dissolved oxygen in alcohol according to Claim 7, further comprising allowing the hydrogen-occluding metal catalyst to occlude an additional amount of hydrogen at a same time as the alcohol is brought into contact with the hydrogen-occluding metal catalyst.

[Claim 9]

The method of removing dissolved oxygen in alcohol according to Claim 7 or 8, further comprising removing water after the dissolved oxygen is

removed from the alcohol, wherein the water is generated when the dissolved oxygen is removed.

[Claim 10]

The method of removing dissolved oxygen in alcohol according to any one of Claims 7 to 9,

wherein the hydrogen-occluding metal catalyst is anion exchangers having palladium or platinum carried thereon.

CLAIMS

[Claim 1]

An alcohol supply apparatus for supplying alcohol, the alcohol being used to rinse or dry an object, or to rinse and to dry an object, and the alcohol supply apparatus comprising:

a device for removing dissolved oxygen , the device being charged with a hydrogen-occluding metal catalyst in which hydrogen has been occluded, and

a water removing device positioned downstream of the device for removing dissolved oxygen, wherein the water removing device removes water generated in the device for removing dissolved oxygen when the dissolved oxygen is removed,

wherein the device for removing dissolved oxygen removes dissolved oxygen from the alcohol by bringing the alcohol into contact with the hydrogen-occluding metal catalyst.

[Claim 2]

The alcohol supply apparatus according to Claim 1, further comprising:

an alcohol concentration measuring device for measuring alcohol concentration in a liquid, the liquid being obtained by the device for removing dissolved oxygen,

a bypass line that bypasses the water removing device,

control means for controlling the bypass line such that the liquid obtained by the device for removing dissolved oxygen flows through the bypass line when the alcohol concentration, measured by the alcohol concentration measuring device, is equal to or more than a predetermined value and such that the liquid obtained by the device for removing dissolved oxygen flows through the water removing device when the alcohol concentration, measured by the alcohol concentration measuring device, is less than the predetermined value.

[Claim 3]

A rinsing liquid supply apparatus, the rinsing liquid being used to rinse an object, and the rinsing liquid supply apparatus comprising:

a device for removing dissolved oxygen,

the device being charged with a hydrogen-occluding metal catalyst in which hydrogen is occluded,

pure water supply means, and

a mixed water storage tank positioned downstream of the device for removing dissolved oxygen and the pure water supply means, the mixed water storage tank storing a mixture of the alcohol obtained by the device for removing dissolved oxygen and pure water supplied from the pure water supply means,

wherein the device for removing dissolved oxygen removes dissolved oxygen from the alcohol by bringing the alcohol into contact with the hydrogen-occluding metal catalyst.

[Claim 4]

A rinsing liquid supply apparatus, the rinsing liquid being used to rinse an object, and the rinsing liquid supply apparatus comprising:

alcohol supply means,

pure water supply means,

a mixed water storage tank positioned downstream of the alcohol supply means and the pure water supply means, the mixed water storage tank storing a mixture of alcohol supplied from the alcohol supply means and pure water supplied from the pure water supply means, and

a device for removing dissolved oxygen,

the device being positioned downstream of the mixed water storage tank and being charged with a hydrogen-occluding metal catalyst in which hydrogen is occluded,

wherein the device for removing dissolved oxygen removes dissolved oxygen from the alcohol by bringing the alcohol into contact with the hydrogen-occluding metal catalyst.

[Claim 5]

A method of removing dissolved oxygen in alcohol:

comprising removing dissolved oxygen from alcohol that contains the dissolved oxygen by bringing the alcohol into contact with a hydrogen-occluding metal catalyst which has occluded hydrogen and

allowing the hydrogen-occluding metal catalyst to occlude an additional amount of hydrogen at a same time as the alcohol is brought into contact with the hydrogen-occluding metal catalyst.

[Claim 6]

A method of removing dissolved oxygen in alcohol:

comprising removing dissolved oxygen from alcohol that contains the dissolved oxygen by bringing the alcohol into contact with a hydrogen-occluding metal catalyst which has occluded hydrogen and

removing water after the dissolved oxygen is removed from the alcohol, wherein the water is generated when the dissolved oxygen is removed.